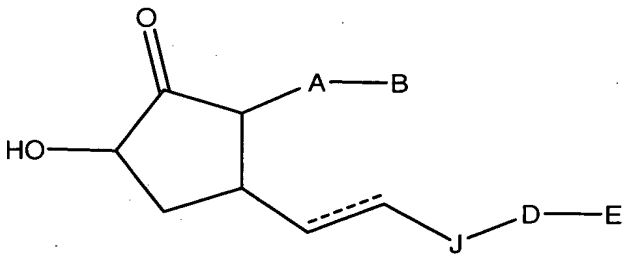
CLAIMS

What is claimed is:

1. A compound comprising



or a pharmaceutically acceptable salt or a prodrug thereof,

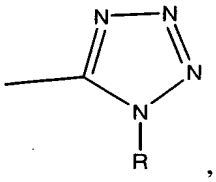
wherein

the dashed line represents the presence or absence of a double bond;

J is C=O or CHOH;

A is $-(CH_2)_6-$, or *cis* $-CH_2CH=CH-(CH_2)_3-$, wherein 1 or 2 carbons may be substituted with S or O;

B is CO_2H, or CO_2R, $CONR_2$, $CONHCH_2CH_2OH$, $CON(CH_2CH_2OH)_2$, CH_2OR, $P(O)(OR)_2$, $CONRSO_2R$, $SONR_2$, or



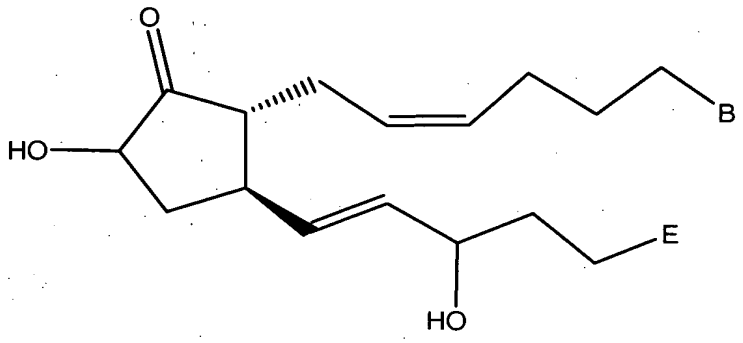
,

R is H, C_{1-6} alkyl;

D is $-(CH_2)_n-$, $-X(CH_2)_n$, or $-(CH_2)_nX-$, wherein n is from 0 to 3 and X is S or O; and

E is an aromatic or heteroaromatic moiety having from 0 to 4 substituents, said substituents each comprising from 1 to 6 non-hydrogen atoms.

2. The compound of claim 1 comprising

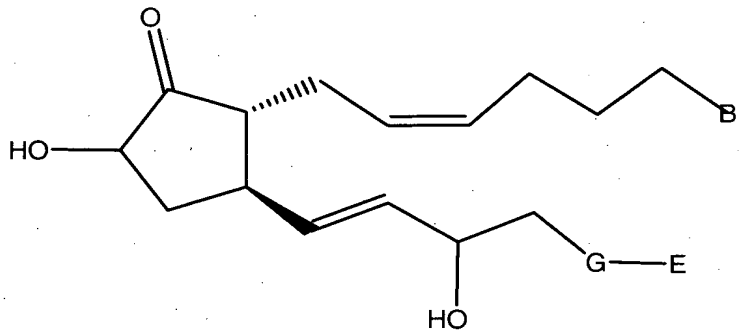


or a pharmaceutically acceptable salt or a prodrug thereof.

3. The compound of claim 2 wherein E is an aromatic moiety having from 0 to 2 substituents, wherein said aromatic moiety or heteroaromatic moiety is selected from the group consisting of phenyl, thienyl, benzothienyl, and napthyl, and said substituents are selected from the group consisting of methyl, methoxy, chloro, and fluoro.

4. The compound of claim 2 wherein E is a moiety selected from the group consisting of phenyl, napthyl, and benzothienyl, or E is a monochloro derivative of one of these moieties.

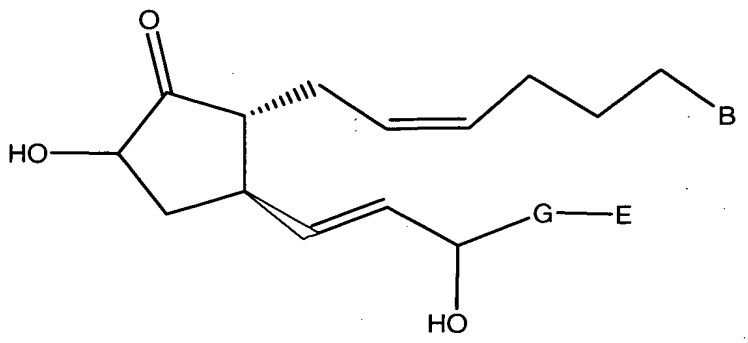
5. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof,

wherein G is CH_2, O, or S.

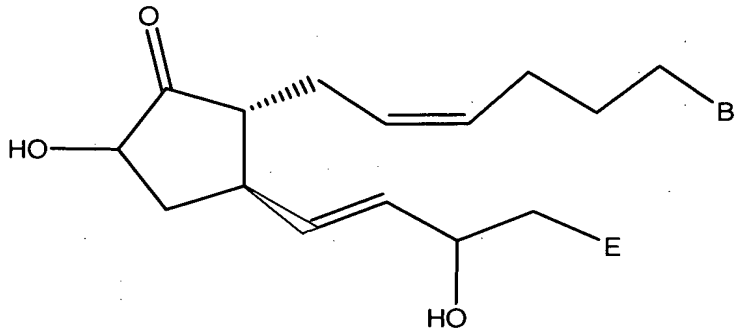
6. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof,

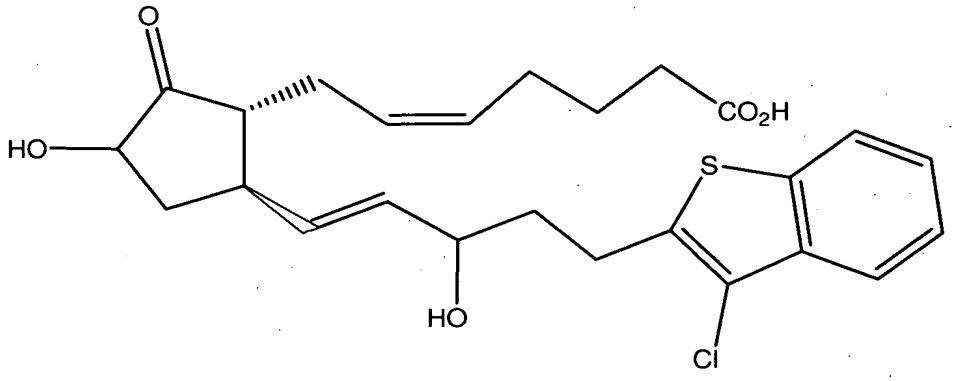
wherein G is CH_2, O, or S.

7. The compound of claim 1 comprising



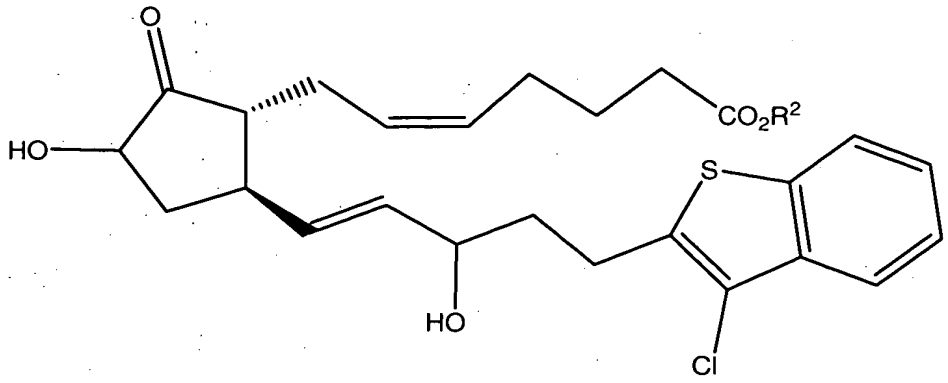
or a pharmaceutically acceptable salt or a prodrug thereof.

8. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof.

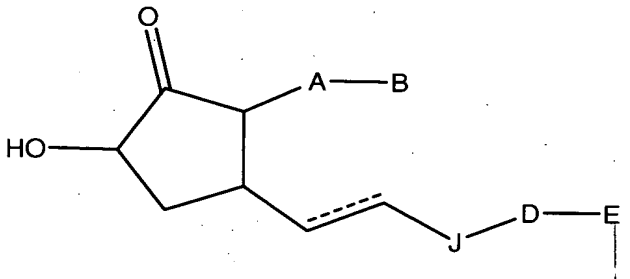
9. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof,

wherein R^2 is an alkyl moiety having from 1 to 6 carbons.

10. A method comprising administering an effective amount of



or a pharmaceutically acceptable salt or a prodrug thereof,

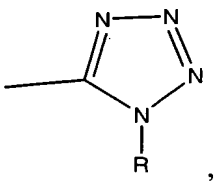
wherein

the dashed line represents the presence or absence of a double bond;

J is C=O or CHOH;

A is $-(CH_2)_6-$, or *cis* $-CH_2CH=CH-(CH_2)_3-$, wherein 1 or 2 carbons may be substituted with S or O;

B is CO_2H, or CO_2R, $CONR_2$, $CONHCH_2CH_2OH$, $CON(CH_2CH_2OH)_2$, CH_2OR, $P(O)(OR)_2$, $CONRSO_2R$, $SONR_2$, or



,

R is H, C_{1-6} alkyl;

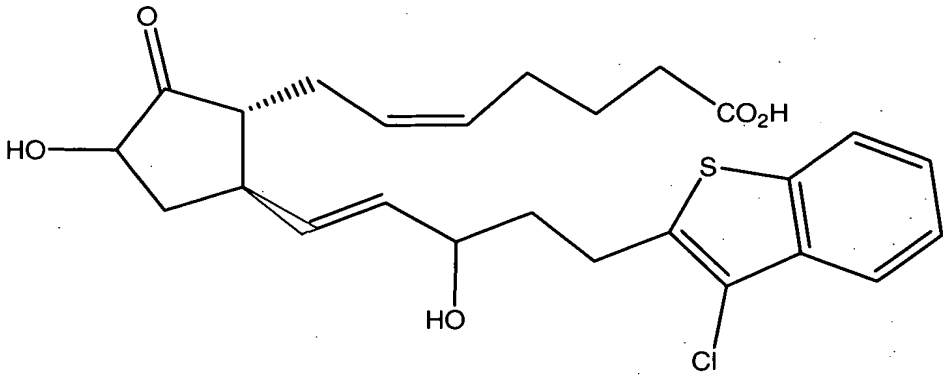
D is $-(CH_2)_n-$, $-X(CH_2)_n$, or $-(CH_2)_nX-$, wherein n is from 0 to 3 and X is S or O; and

E is an aromatic or heteroaromatic moiety having from 0 to 4 substituents, said substituents each comprising from 1 to 6 non-hydrogen atoms.

11. The method of claim 10 wherein A is *cis*-$CH_2CH=CH-(CH_2)_3$-.

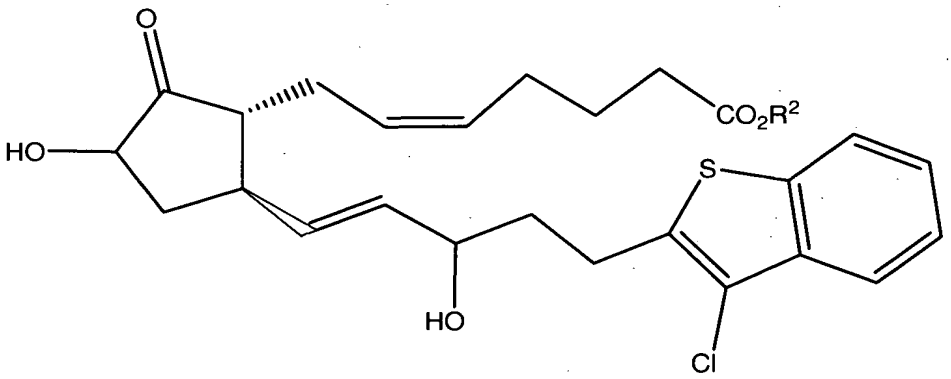
12. The method of claim 10 wherein E is a phenyl, naphthyl, or benzothienyl moiety, or a monochloro derivative thereof.

13. The method of claim 10 comprising



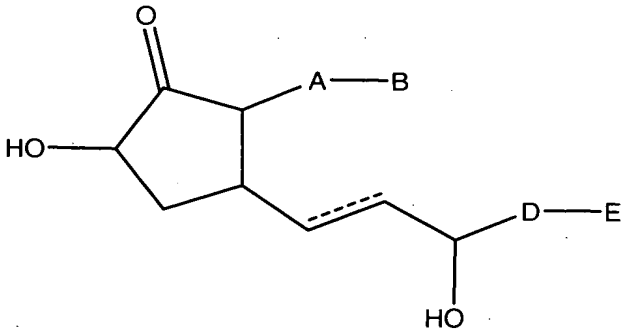
or a pharmaceutically acceptable salt or a prodrug thereof.

14. The method of claim 10 comprising



or a pharmaceutically acceptable salt or a prodrug thereof,
wherein R^2 is an alkyl moiety having from 1 to 6 carbons.

15. A method comprising administering an effective amount of



or a pharmaceutically acceptable salt or a prodrug thereof,

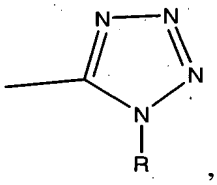
to a mammal for the prevention or treatment of a disease or condition related to activity of a prostaglandin EP_4 receptor,

wherein

the dashed line represents the presence or absence of a bond;

A is $-(CH_2)_6-$, or *cis* $-CH_2CH=CH-(CH_2)_3-$, wherein 1 or 2 carbons may be substituted with S or O;

B is CO_2H, or CO_2R, $CONR_2$, $CONHCH_2CH_2OH$, $CON(CH_2CH_2OH)_2$, CH_2OR, $P(O)(OR)_2$, $CONRSO_2R$, $SONR_2$, or



,

R is H, C_{1-6} alkyl;

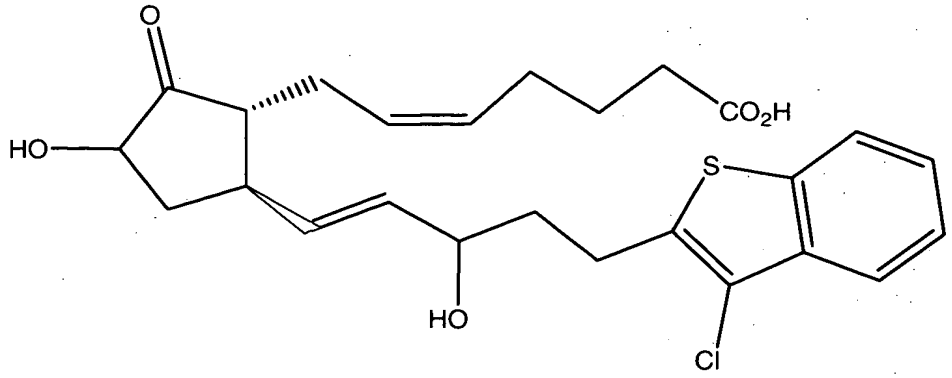
D is $-(CH_2)_n-$, $-X(CH_2)_n$, or $-(CH_2)_nX-$, wherein n is from 0 to 3 and X is S or O; and

E is an aromatic or heteroaromatic moiety having from 0 to 4 substituents, said substituents each comprising from 1 to 6 non-hydrogen atoms.

16. The method of claim 15 wherein said disease or condition is selected from the group consisting of asthma, dysmenorrhea, osteoporosis, bone disorders, constipation, renal disorders, sexual dysfunction, baldness, acute hepatitis, bronchitis, burn, chronic obstructive respiratory diseases, Crohn's disease, digestive ulcer, hemophagous syndrome, hepatopathy, hypercytokinemia at dialysis, hypertension, immunological diseases, inflammatory conditions, Kawasaki disease, liver injury, macrophage activation syndrome, myocardial ischemia, nephritis, nerve cell death, premature birth, pulmonary emphysema, pulmonary fibrosis, pulmonary injury, renal failure, sepsis, shock, sleep disorder, Still disease, stomatitis , systemic granuloma, systemic inflammatory syndrome, thrombosis and stroke, ulcerative colitis, acute myocardial infarction, vascular thrombosis, hypertension, pulmonary hypertension, ischemic heart disease, congestive heart failure, and angina pectoris.

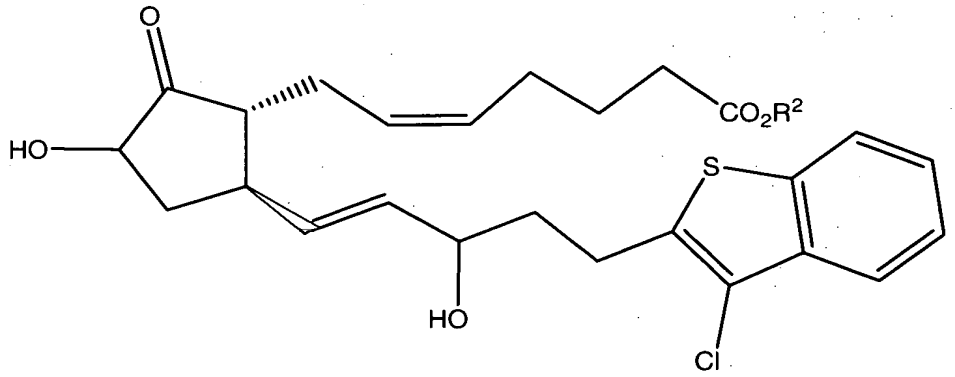
17. The method of claim 15 wherein A is $-(CH_2)_6-$ or *cis*-$CH_2CH{=}CH-(CH_2)_3-$ having no heteroatom substitution.

18. The method of claim 15 comprising



or a pharmaceutically acceptable salt or a prodrug thereof.

19. A method comprising administering an effective amount of



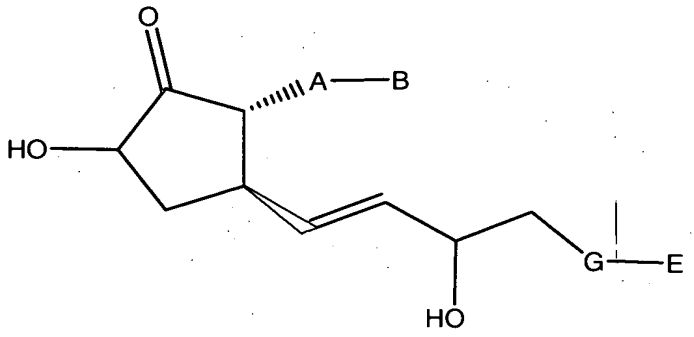
or a pharmaceutically acceptable salt or a prodrug thereof,
to a mammal suffering from a disease or condition,
wherein R^2 is an alkyl moiety having from 1 to 6 carbons, and
said disease or condition is selected from the group consisting of asthma, dysmenorrhea, osteoporosis, bone disorders, constipation, renal disorders, sexual dysfunction, baldness, acute hepatitis, bronchitis, burn, chronic obstructive respiratory diseases, Crohn's disease, digestive ulcer, hemophagous syndrome, hepatopathy, hypercytokinemia at dialysis, hypertension, immunological diseases, inflammatory conditions, Kawasaki disease, liver injury, macrophage activation syndrome, myocardial ischemia, nephritis, nerve cell death, premature birth, pulmonary emphysema, pulmonary fibrosis, pulmonary injury, renal failure, sepsis, shock, sleep disorder, Still disease,

stomatitis , systemic granuloma, systemic inflammatory syndrome, thrombosis and stroke, ulcerative colitis, acute myocardial infarction, vascular thrombosis, hypertension, pulmonary hypertension, ischemic heart disease, congestive heart failure, and angina pectoris.

20. The compound of claim 1 comprising (*Z*)-7-{(1*R*,5*R*)-5-[(*E*)-5-(3-Chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl]-3-hydroxy-2-oxo-cyclopentyl}-hept-5-enoic acid methyl ester; or (*Z*)-7-{(1*R*,5*R*)-5-[(*E*)-5-(3-Chloro-benzo[*b*]thiophen-2-yl)-3-hydroxy-pent-1-enyl]-3-hydroxy-2-oxo-cyclopentyl}-hept-5-enoic acid.

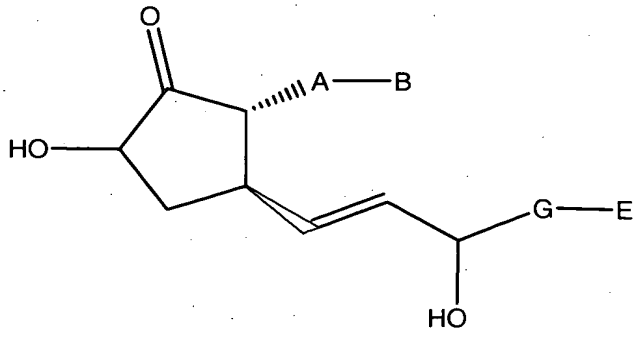
21. The compound of claim 9 wherein R^2 is methyl.

22. The compound of claim 1 comprising



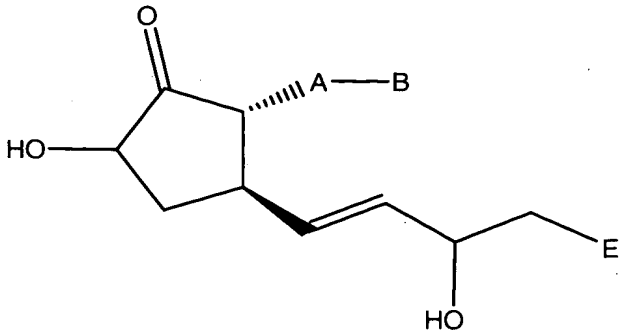
or a pharmaceutically acceptable salt or a prodrug thereof, wherein G is CH_2, O, or S.

23. The compound of claim 1 comprising



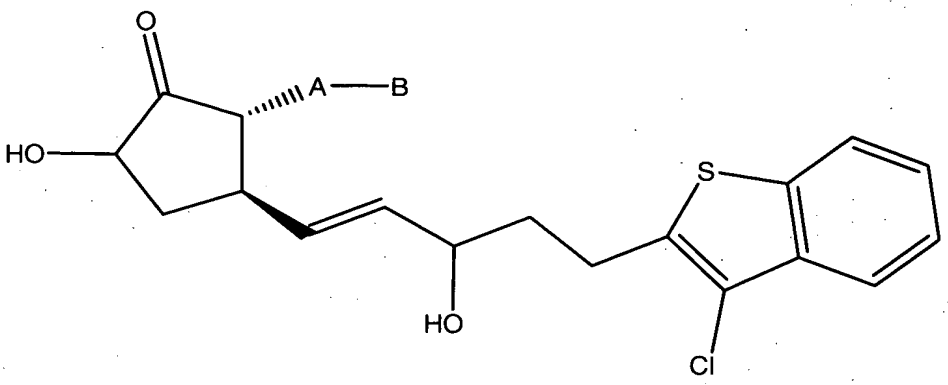
or a pharmaceutically acceptable salt or a prodrug thereof, wherein G is CH_2, O, or S.

24. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof.

25. The compound of claim 1 comprising



or a pharmaceutically acceptable salt or a prodrug thereof.